

C L A I M S

1. An acoustically effective underbody covering (1, 1', 1'', 1''', 1''') for motor vehicles, having a support part (2, 2', 2'', 2''', 2''') attachable to the underbody (12) of the motor vehicle and at least one sound-absorbing part (3) supported thereby, characterized in that the sound-absorbing part (3) is at least partially covered on top with a microperforated, heat-shielding layer (14), the microperforated, heat-shielding layer (14) being exposed toward the underbody (12) of the motor vehicle and the sound-absorbing part (3) being made of mineral wool, an open-pored foam, and/or a fibrous nonwoven material.
2. The underbody covering according to Claim 1, characterized in that the sound-absorbing part (3) and the microperforated, heat-shielding layer (14) are positioned at a distance to one another.
3. The underbody covering according to Claim 1 or 2, characterized in that at least one further sound-absorbing part (3), whose top is exposed, is supported on the support part (2, 2', 2'', 2''', 2''').
4. The underbody covering according to one of Claims 1 through 3, characterized in that the sound-absorbing part (3) is clamped and/or supported in a form-fitting way

around its edge on the support part (2, 2', 2'', 2''', 2'''').

5. The underbody covering according to one of Claims 1 through 4,  
characterized in that the sound-absorbing part (3) is permeable to air.
6. The underbody covering according to one of Claims 1 through 5,  
characterized in that the sound-absorbing part (3) is formed by one or more air-permeable and/or open-pored material layers.
7. The underbody covering according to one of Claims 1 through 6,  
characterized in that the bottom of the support part (2, 2', 2'', 2''', 2'') is implemented largely or as a whole with a smooth surface.
8. The underbody covering according to one of Claims 1 through 7,  
characterized in that the sound-absorbing part (3) is covered on the bottom with a perforated film which is externally exposed.
9. The underbody covering according to one of Claims 1 through 8,  
characterized in that the sound-absorbing part (3) is set in a passage implemented in the support part.
10. The underbody covering according to Claim 9,

characterized in that a peripheral rib (15, 15'), which projects upward and/or downward, is implemented on the edge of the passage (10).

11. The underbody covering according to one of Claims 1 through 10, characterized in that multiple passages (10) are implemented in the support part (2, 2', 2'', 2''', 2''''), in each of which a sound-absorbing part is set.
12. The underbody covering according to one of Claims 1 through 11, characterized in that the support part (2, 2', 2'', 2''', 2''''') has oscillation-decoupling elements (5), via which the support part is attachable to the underbody of the motor vehicle.
13. The underbody covering according to one of Claims 1 through 12, characterized in that the support part (2, 2', 2'', 2''', 2''''') is designed in such a way that it forms an essentially closed cavity (16) with the underbody (12) of the motor vehicle in the mounted state.
14. The underbody covering according to one of Claims 1 through 13, characterized in that the support part (2, 2', 2'', 2''', 2''''') is shaped in such a way that, in the mounted state of the underbody covering (1, 1', 1'', 1''', 1'''''), its microperforated, heat-shielding layer (14) and/or its sound-absorbing part (3),

whose top is exposed, are each at a distance to the underbody (12) of the motor vehicle.

15. The underbody covering according to one of Claims 1 through 14,  
characterized in that at least one opening (17),  
which is used for cooling airflow against an exhaust train section (13) or another heat-releasing vehicle assembly, is implemented on the support part (2''').
16. The underbody covering according to one of Claims 1 through 15,  
characterized in that at least one air channel (18) is implemented on the support part (2''').
17. The underbody covering according to one of Claims 1 through 16,  
characterized in that the sound-absorbing part (3) has hydrophobic and/or oleophobic properties.
18. The underbody covering according to one of Claims 1 through 17,  
characterized in that the microperforated, heat-shielding layer (14) is clamped, cast in, or extrusion coated around the edge on the support part (2, 2', 2'', 2''', 2''').